



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top; padding: 5px;"> <p>(21) International Application Number: PCT/US00/00992</p> <p>(22) International Filing Date: 14 January 2000 (14.01.00)</p> <p>(30) Priority Data: 09/231,156      15 January 1999 (15.01.99)      US</p> <p>(71) Applicant (for all designated States except US): EXXON-MOBIL RESEARCH AND ENGINEERING COMPANY [US/US]; P.O. Box 390, 180 Park Avenue, Florham Park, NJ 07932-0390 (US).</p> <p>(72) Inventors; and (75) Inventors/Applicants (for US only): <u>RILEY</u>, Kenneth, Lloyd [-/US]; 1289 Rodney Drive, Baton Rouge, LA 70808 (US). <u>SCHUETTE</u>, William, Lee [-/US]; 9254 Flase River Road, New Roads, LA 70760 (US). <u>SOLED</u>, Stuart, Leon [-/US]; 21 Cooks Cross Road, Pittstown, NJ 08867 (US). <u>MISEO</u>, Sabato [-/US]; 770 County Road 579, Pittstown, NJ 08867 (US).</p> <p>(74) Agents: OTT, Roy, J. et al.; ExxonMobil Research and Engineering Company, P.O. Box 390, Florham Park, NJ 07932-0390 (US).</p> </td> <td style="width: 50%; vertical-align: top; padding: 5px;"> <p>(81) Designated States: AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, SL, TR, TT, UA, US, UZ, VN, YU, ZA, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p><b>Published</b> <i>With international search report.</i></p> </td> </tr> </table>			<p>(21) International Application Number: PCT/US00/00992</p> <p>(22) International Filing Date: 14 January 2000 (14.01.00)</p> <p>(30) Priority Data: 09/231,156      15 January 1999 (15.01.99)      US</p> <p>(71) Applicant (for all designated States except US): EXXON-MOBIL RESEARCH AND ENGINEERING COMPANY [US/US]; P.O. Box 390, 180 Park Avenue, Florham Park, NJ 07932-0390 (US).</p> <p>(72) Inventors; and (75) Inventors/Applicants (for US only): <u>RILEY</u>, Kenneth, Lloyd [-/US]; 1289 Rodney Drive, Baton Rouge, LA 70808 (US). <u>SCHUETTE</u>, William, Lee [-/US]; 9254 Flase River Road, New Roads, LA 70760 (US). <u>SOLED</u>, Stuart, Leon [-/US]; 21 Cooks Cross Road, Pittstown, NJ 08867 (US). <u>MISEO</u>, Sabato [-/US]; 770 County Road 579, Pittstown, NJ 08867 (US).</p> <p>(74) Agents: OTT, Roy, J. et al.; ExxonMobil Research and Engineering Company, P.O. Box 390, Florham Park, NJ 07932-0390 (US).</p>	<p>(81) Designated States: AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, SL, TR, TT, UA, US, UZ, VN, YU, ZA, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p><b>Published</b> <i>With international search report.</i></p>
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<p>(54) Title: PRODUCTION OF LOW SULFUR/LOW NITROGEN HYDROCRACKATES</p> <div style="text-align: center; margin: 20px 0;"> </div>				
<p>(57) Abstract</p> <p>A two stage hydrodesulfurizing process for producing low sulfur distillates. A distillate boiling range feedstock containing in excess of about 3,000 wppm sulfur is hydrodesulfurized in a first hydrodesulfurizing stage containing one or more reaction zones in the presence of hydrogen and a hydrodesulfurizing catalyst. The liquid product stream thereof is passed to a first separation stage wherein a vapor phase product stream and a liquid product stream are produced. The liquid product stream, which has a substantially lower sulfur and nitrogen content than the original feedstream is passed to a second hydrodesulfurizing stage also containing one or more reaction zones where it is reacted in the presence of hydrogen and a second hydrodesulfurizing catalyst at hydrodesulfurizing conditions. The catalyst in any one or more reaction zones is a bulk multimetallic catalyst comprised of at least one Group VIII non-noble metal and at least two Group VIB metals.</p>				